An Essay
On
The Liver, and its Diseases.

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The Liver

It is the largest organ in the human body. It is situated principally in right hypochondrium, viz. the right superior portion of the abdominal cavity: and extends through the Epigastric region, to the left hypochondrium. It is in relation superiorly, to the diaphragm, posteriorly, to the vertebral column, aorta, and Vena cava ascendens; — inferiorly, with the stomach, ascending portion of the Duodenum, transverse colon, right supra-renal capsule, and kidney.

Its shape, antero-superiorly, is convex.- posterio-inferiorly, is irregularly concave. It is held in situ, by five ligaments, four of which, are folds of the peritoneum, and one, the round ligament, is a fibrous cord, resulting from the obliteration of the umbilical vein.

The posterior border of the Liver, is round, and thick. anterior, is thin, with a sharp, free edge. This organ is nearly enveloped by the Peritoneum, - a serous membrane, - also, is covered by a fibrous membrane, - called the Capsule of Glisson, which dips into its structure, forming a connecting tissue between the lobules, and envelops the vessels and nerves in their course through the organ. The Liver is divided into lobes, and fissures. The lobes are five in number, viz. Right, and left lobe, the right, being from 4 to 6 times larger than the left: and on the under surface of the right lobe, are the three lobes, named respectively as follows, viz, Lobus Quadratus, named from its shape Lobus Spigelia, named from a Belgian Physician, in A.D. 1616. and Lobus Caudatus.

named from its position and shape. These three are small in size and are bounded by fissures. The substance of the liver, is divided into lobules, by the vessels which enter into its structure. The lobules, are smaller, and more angular in the center, than in the circumference, owing to their greater pressure. These lobules are made up of minute cells, of the same shape, and within the cells, are minute granules, or oil globules, also a nucleus, & nucleolus, The cells are contained within secreting tubles, which extend from the small hepatic ducts, between the lobules, and penetrate the whole substance of the lobules. These cells are the important agents for the elimination of the Bile from the blood.

The Liver is supplied with blood by the portal vein, and hepatic artery: the former, conveying the blood from the chylopoietic viscera, for purification in the Liver, from which the bile is mainly formed; the latter, branching off from the coeliac axis, supplies the organ with blood, for its own nourishment. These vessels, as they enter the substance of the Liver, divide into branches; these branches subdivide, and thus continue their ramifications throughout the whole interior substance of the organ, and by their meeting, and forming plexuses, divide ~~the~~ it into the lobules above mentioned. From the veins, between the lobules, capillaries extend into their substance, converging from their circumference, to the center

of each lobule, thus supplying the most minute part of the organ with blood. At the center of each lobule originate the minute rootlets of the hepatic veins: these diverge, pass outwards, and form interlobular veins, continue their course, form venous plexuses, and all, finally unite to form the large hepatic trunks, which pass out of the Liver at its posterior border, and enter the inferior vena cava, conveying the venous blood from the organ. The Liver is supplied with nerves, principally from the Hepatic plexus of the sympathetic system, also from the Pneumogastric, & phrenic nerves. Ducts, originate at the bases of the lobules, by cæcal ends, and receiving the minute tubules within the lobules, continue their course, and carry

away the bile, manufactured, or separated from the venous blood, in the Liver, through the hepatic duct, which they unite and form, and which discharges it in the Gall-bladder, and into the Ductus Communis Coledochus, formed by the union of the cystic, and hepatic ducts. Intimately connected with the Liver, is the Gall-bladder, which is divided into a body, fundus, and neck. It is situated in a fossa, on the under surface of the right lobe; the fundus is placed downwards, and extends to the free margin of Liver, and the neck is directed upwards. Its use, is to receive bile, and store it up for a time when it may be required. The duct, extending from it, is named cystic duct. It is supplied with arteries, veins, and nerves.

The Functions of the Livers

First — Depurative function of external secretion; Second, — an assimulative function of internal secretion. The first, consists in the secretion of bile from the venous blood, principally from the Portal vein. Through the agency of the cells within the lobules, which is conveyed by minute tubules to the ~~ducts~~ interlobular ducts. The blood remaining, is gathered up by the capillaries, and carried to the hepatic veins. In the 2nd — the assimulative function not only produces sugar, but also manufactures fat, and it is all done, through the agency of the hepatic cells. The average amount of sugar contained in the healthy Liver, is about 1.68 per cent, the weight of the entire organ.

Diseases of the Liver.

This, like all other organs of the body, is liable to become diseased. When this occurs, its functions are disturbed, and symptoms are manifested, more or less ~~plain~~ perceptible, and severe, according to the nature of the disease. Among the nominal diseases with which it may be affected, are the following.

1st. Hyperaemia { Acute congestion. Chronic congestion.

Symptoms, Pain in right shoulder, and loin. Sensation of weight, & tension, in the right hypochondrium. Nausea, & vomiting. Bowels deranged. Tongue coated, — loss of appetite, and strength, - depression of spirits, - and enlargement of the organ. Besides the above symptoms, in chronic congestion, there is constantly more or less yellowness of the conjunctiva, and increased dullness on percussion, in the region of the Liver.

Acute Hepatitis,

Consists; ~~of~~ acute inflamation of the substance of the Liver. Symptoms, in addition to those in acute congestion, are, more thirst, more irritability of the stomach, - difficult respiration, - heat over the surface of the region of the liver, - dry cough, & sometimes quick pulse - enlarged spleen, and albumen in urine. If caused by a blow, skin is discolored, parts swollen, and may have fever, and chills. Pain dull, or acute. The more the peritoneum is affected, the more acute, will be the pain.

Chronic Hepatitis. — Symptoms - Dull heavy pain in the hepatic region, worse by pressure, dry heated skin, - sallow hue, yellow conjunctiva, indigestion, stools whitish, and generally hard. - short cough. - liver enlarged, - borders thickened, & hardened. Hepatitis, may result in the formation of abscesses.

Cirrhosis, or Interstitial inflamation of the Liver. Among the symptoms, are 1st enlargement, and then decrease in size of the organ. Most always connected with enlargement of the spleen; Portal circulation obstructed, causing ascites, and Oedema of the lower extremities enlarged veins of abdomen; may have nausea, belching up of wind, & vomiting. When disease is severe, may be vomiting of blood, and bloody stool. Loss of flesh & strength; Jaundice.

Syphylitic inflamation of the Liver. Scattered nodules on its surface. Not Jaundiced, Pale, cachectic look, and may have signs of syphylis in the throat. Disease may not excite suspicion during a life time.

Acute Yellow Atrophy of the Liver, Consists in rapid diminution in size

of all its diameters.

Symptoms, Jaundice, never absent. It may appear several days before the severe attack. Headache, dizziness, sopor, indifferent features, Gritting of teeth, chewing motions of jaws, Fever, with a chill. Nausea, & vomiting of blood, bloody stools. May set in abruptly, with pain in head, and vomiting 1st of contents of the stomach, & then of a substance similar to coffee grounds, in appearance, which is altered blood.

There may be chronic atrophy of the Liver; the most common cause of simple atrophy of the Liver, is the coagulation of blood in the portal vein.

Colloid Liver.

Consists in albuminous degeneration of the organ. Symptoms. May enlarge, so as to fill the whole abdomen. Does not obstruct the

portal circulation, & hence does not cause Ascites, which if present, is caused by the kidneys. Liver enlarges slowly, but is painless, Constitutional disorders.

Carcinoma Hepatis or Cancer of the Liver. — Syn

There are three forms viz. Fasciculati, Alveolar, - and Medullary. The last, is most common. Most often found after the extirpation of cancer, in Mamma. Occurs most frequently, between fifty & sixty years of age. Symptoms — Size, sometime enormous, Surface of Liver is uneven, Can detect the nodules, by palpation; generally tenderness present in the region of the Liver, Also a radiation of pain towards the right shoulder. Cachectic look, Jaundice usually present but if absent skin is ashy, dirty, yellowish, dry and peels off. also skin is brittle.

Ascites, may be present, also disordered nutrition, and gastric disturbances. May be a slight fever.

Hydatids of the Liver, consist of thick, white, fibrous, yellowish sacks, and roundish, like grapes, size varies from that of a pin head, to a grape, One cyst, is contained within the other, and there are groups of whitish granules within the cysts, called Echinococci. Among the diagnostic symptoms, are, dry cough, palpitation and displacement of the heart, vomiting, and perhaps, jaundice, and ascites, owing to the pressure of the enlarged tumors on the adjacent organs.

The most certain symptom, is the presence of elastic tumors, which can be detected by percussion, over the extent of the hepatic region. The Liver enlarges,

sometimes extending upwards into the ~~outer~~ 2nd intercostal space, and downwards into the abdomen, below the ribs. The Hydatids, increase slowly in size, and ordinarily last several years.

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